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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,108	12/02/2003	Jens Barrenscheen	J0658.0006	4414

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DICKSTEIN SHAPIRO LLP
1177 AVENUE OF THE AMERICAS 6TH AVENUE
NEW YORK, NY 10036-2714

EXAMINER	
DSOUZA, JOSEPH FRANCIS A	
ART UNIT	PAPER NUMBER
2611	
MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/727,108	BARRENSCHEEN ET AL.	
	Examiner	Art Unit	
	ADOLF DSOUZA	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 - 19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 - 16,19* is/are rejected.

7)☒ Claim(s) *17 - 18* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 December 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Europe on December 2, 2002. It is noted, however, that applicant has not filed a certified copy of the 02026774.6 application as required by 35 U.S.C. 119(b).

Drawings

2. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. Applicant has acknowledged (Specification [0035]) that Figure 1 is Prior Art. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1 – 4, 9 - 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arslain et al. (US 6,366,153) in view of Applicant Admitted Prior Art (hereafter referred to as AAPA).

Regarding claim 1, Arslain discloses an arrangement comprising a first semiconductor chip (Fig. 1, element 100) and a second semiconductor chip (Fig. 1, element 100) connected thereto,

where the second semiconductor chip is additionally connected to electrical loads and drives these electrical loads (Fig. 1, element 118) on the basis of a timing which is defined by load control data (column 2, line 46 – column, line 7),

where the first semiconductor chip transmits to the second semiconductor chip control data which control the second semiconductor chip (Fig. 1; column 2, lines 63 - 67; column 3, lines 1- 7);

and where the second semiconductor chip transmits to the first semiconductor chip diagnostic data which represent at least one of states prevailing in the second semiconductor chip and events which occur in the second semiconductor chip (Fig. 1; column 3, lines 8 – 50).

Arslain does not disclose transmission of the load control data and pilot data and that the second semiconductor chip transmits the diagnostic data).

In the same field of endeavor, however, AAPA discloses the load control data and pilot control data (DATA2, DATA1a, Figure1) and the first semiconductor chip includes means for transmitting appropriate pilot data to the second semiconductor chip, and the second semiconductor chip includes means for controlling a transmission rate by which the diagnostic data is transmitted to the first semiconductor chip in accordance with the appropriate pilot data (Figure 1, DATA1b).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method , as taught by AAPA, in the system of Arslain because this would allow for communication between the semiconductor chips.

Regarding claim 2, Arslain discloses that the first semiconductor chip is a program-controlled unit (Fig. 1, element 102; wherein the program controlled unit is interpreted as the processor).

Regarding claim 3, Arslain discloses that the second semiconductor chip is a power chip (Fig. 1, element 100; wherein chip 100 is interpreted as the power chip).

Regarding claim 4, Arslain does not disclose that the diagnostic data are transmitted in time with a transmission clock signal generated in the second semiconductor chip.

In the same field of endeavor, however, AAPA discloses the diagnostic data are transmitted in time with a transmission clock signal generated in the second semiconductor chip, and wherein this transmission clock signal is not transmitted to the

first semiconductor chip (Fig. 1, multiple "DATA" and "CLK" signals. It is obvious to one of ordinary skill in the art that the data is transmitted in time with the clock signals).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method , as taught by AAPA, in the system of Arslain because this would allow for communication between the semiconductor chips.

Regarding claim 9, Arslain discloses the diagnostic data are transmitted via a line via which neither load control data nor pilot data are transmitted (Fig. 1; column 3, lines 8 – 33).

Regarding claim 10, Arslain discloses the load control data and the pilot data are transmitted via a second transmission channel (Fig. 1).

Regarding claim 11, Arslain discloses the second transmission channel comprises a transmission clock line via which the first semiconductor chip transmits a transmission clock signal to the second semiconductor chip (Fig. 1; column 2, line 63 - column 3, line 7), a data line via which the first semiconductor chip transmits the load control data and the pilot data to the second semiconductor chip in time with the transmission clock signal (Fig. 1; column 2, line 63 – column 3, line 7), and a chip select line via which the first semiconductor chip transmits the chip select signal to the second semiconductor chip (Fig. 1; column 2, line 63 – column 3, line 7).

Arslain does not disclose a chip select signal signaling to the second semiconductor chip the start and end of the transmission data.

In the same field of endeavor, however, AAPA discloses chip select signal signaling to the second semiconductor chip the start and end of the transmission of data intended for the second semiconductor chip via the data line ([0023]).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method , as taught by AAPA, in the system of Arslain because this would allow for communication between the semiconductor chips.

Regarding claim 12, Arslain discloses the load control data and the pilot data are transmitted in units of frames, and wherein the load control data frames and the pilot data frames are transmitted using time-division multiplexing (column 2, line 63 – column 3, line 7; wherein it is obvious that frames are used and that time division multiplexing is used).

Regarding claim 13, Arslain discloses the first semiconductor chip defines time windows of constant length and transmits in each time window either a load control data frame or a control data frame or no data (column 2, line 63 – column 3, line 7; wherein it is obvious to one of ordinary skill in the art that the transmission is in the form of windows).

Regarding claim 14, Arslain discloses the first semiconductor chip transmits no further load control data frame for a respective length of n time windows after transmission of a load control data frame, where n>=0 and where n can be set by the user of the arrangement (column 3, lines 8 - 34).

Regarding claim 15, Arslain discloses a pilot data frame can be transmitted only in a time window in which no load control data frame is to be transmitted (column 2, line 63 - column 3, line 7).

Regarding claim 16, Arslain does not disclose transmission of the pilot data has priority when load control data and pilot data are awaiting transmission simultaneously.

In the same field of endeavor, however, AAPA discloses transmission of the pilot data has priority when load control data and pilot data are awaiting transmission simultaneously ([0009] – [0010]).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method , as taught by AAPA, in the system of Arslain because this would allow for communication between the semiconductor chips.

Regarding claim 19, Arslain discloses the first semiconductor chip has a plurality of respective different output drivers for outputting the load control data, the pilot data and the transmission clock signal, and wherein the first semiconductor chip can have prescribed to it which of the plurality of different output drivers needs to be used in each case (Figure 1; wherein it is obvious to one of ordinary skill in the art to increase the number of drivers).

5. Claim 5 - 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arslain et al. (US 6,366,153) in view of Applicant Admitted Prior Art (hereafter referred to as AAPA) and further in view of Hastings et al. (US 6,772,251).

Regarding claim 5, Arslain does not disclose the transmission rate is prescribed by a transmitting a division factor.

In the same field of endeavor, however, Hastings discloses the transmission rate is prescribed by transmitting a division factor, and wherein the second semiconductor chip divides the frequency of a transmission clock signal transmitted to it by the first semiconductor chip by the division factor and transmits the diagnostic data to the first semiconductor chip in time with the resultant transmission signal (Fig. 1, element 122; column 1, lines 29 – 36; column 2, lines 60 – 67; column 3, lines 1 - 21).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method , as taught by Hastings, in the system of Arslain because this would reduce the wire count (Hastings, column 1, lines 29 – 55).

Regarding claim 6, Arslain does not disclose the transmission clock signal supplied to the second semiconductor chip represents the transmission clock which is used by the first semiconductor chip to transmit the load control data or the pilot data to the second semiconductor chip.

In the same field of endeavor, however, AAPA discloses the transmission clock signal supplied to the second semiconductor chip represents the transmission clock which is

used by the first semiconductor chip to transmit the load control data or the pilot data to the second semiconductor chip ([0021] – [0025]).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method , as taught by AAPA, in the system of Arslain because this would facilitate proper communication between the chips.

Regarding claim 7, Arslain does not disclose the diagnostic data are transmitted in units of frames, where a frame starts with a start bit having a prescribed value and ends with one or two stop bits having prescribed values.

In the same field of endeavor, however, Hastings discloses disclose the diagnostic data are transmitted in units of frames, where a frame starts with a start bit having a prescribed value and ends with one or two stop bits having prescribed values (Fig. 3, elements 310, 318).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method , as taught by Hastings, in the system of Arslain because this would allow for a protocol for transmisison, as is obvious to one of ordinary skill in the art.

6. Claims 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Arslain et al. (US 6,366,153) in view of Applicant Admitted Prior Art (hereafter referred to as AAPA) and further in view of Jeong (US 5,675,584).

Regarding claim 8, Arslain does not disclose over sampling to determine the phase.

In the same field of endeavor, however, Jeong discloses the first semiconductor chip ascertains the phase of the diagnostic data by over sampling the diagnostic data (column 2, lines 62 – 65).

Therefore it would have been obvious to one having ordinary skill in the art, at the time the invention was made, to use the method , as taught by Jeong, in the system of Arslain because this would enable the phase of the incoming stream to be determined, as disclosed by Arslain.

Allowable Subject Matter

7. Claims 17 – 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Other Prior Art Cited

8. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure.

The following patents are cited to further show the state of the art with respect to chip communication:

Hepworth et al. (US 3,975,712) discloses Asynchronous communication interface adaptor.

Fujii et al. (US 6,274,895) discloses a semiconductor integrated circuit device.

Fujii et al. (US 20020030212) discloses a semiconductor integrated circuit device.

Kobayashi et al (US 20020067638) discloses a semiconductor device and data processing system.

Contact Information

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ADOLF DSOUZA whose telephone number is (571)272-1043. The examiner can normally be reached on Monday through Friday from 8:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Payne can be reached on 571-272-3024. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Adolf DSouza
Examiner
Art Unit 2611

AD

/David C. Payne/

Supervisory Patent Examiner, Art Unit 2611